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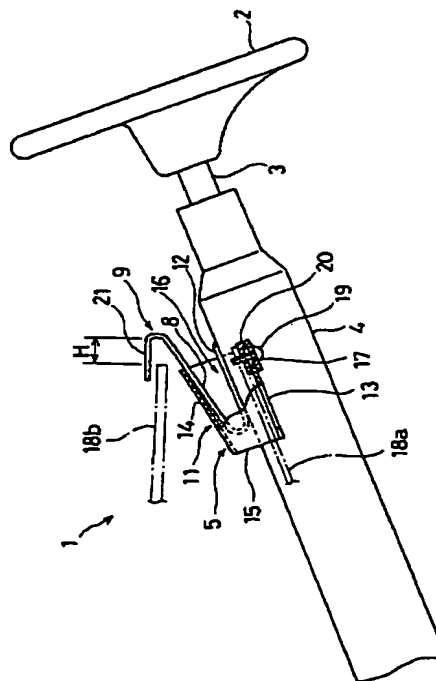
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(54) 【考案の名称】 エネルギー吸収式ステアリング装置

(57) 【要約】

【目的】 ステアリングコラムを車体に精度高く、かつ容易に組み付けることができるとともに、安定したエネルギー吸収能力を発揮させることができる。

【構成】 ステアリングコラム4と車体との間に設けられるエネルギー吸収プレート9の一端部に仮保持フック部21を設ける一方、ステアリングコラム4とコラムブラケット5との間に収容空間16を設け、この収容空間に上記エネルギー吸収プレートのエネルギー吸収折り曲げ部8を収容して構成している。



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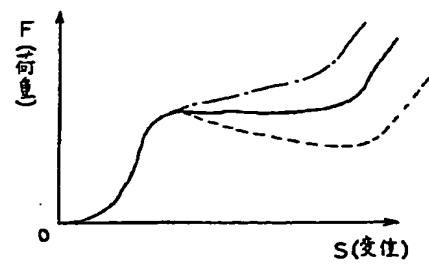
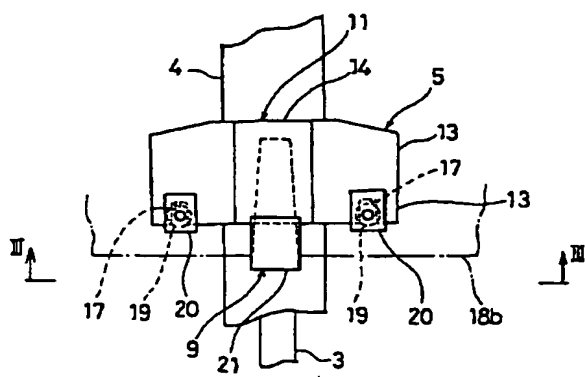
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【図2】

【図7】



【考案が解決しようとする課題】

上記構成のエネルギー吸収式ステアリング装置においては、乗員がステアリングホイールに衝突してステアリングコラムに所定以上の荷重が作用した場合に、上記ステアリングコラムと車体との係着関係が解除されるように構成しなければならない。このため、上記ステアリングコラムと車体との係着構造には、高い組付け精度が要求される。

【0006】

上記ステアリングコラムを車体に対して精度高く組付けるには、上記ステアリングコラムを所定の組付け位置に正確に仮保持して組付け作業を行う必要がある。このため、上記ステアリングコラムを所定の組付け位置に保持するための組付け補助部材や、上記ステアリングコラムを保持するための作業員が必要となる。

【0007】

この結果、上記ステアリング装置の組付け作業が面倒であるとともに、組付け作業の合理化を図ることが困難であった。

【0008】

また、上記公報に記載されているステアリング装置においては、乗員がステアリングホイールに衝突した際の衝突エネルギーを吸収するためのエネルギー吸収部材の一端部が、コラムブラケットと共締め状に車体に対して直接連結されている。したがって、上記ステアリングコラムが少しでも変位すると、上記エネルギー吸収部材が塑性変形させられることになる。

【0009】

一方、上記ステアリングコラムは、複数箇所において車体に対して離脱可能に係着されているが、上記係着関係を解除して上記ステアリングコラムを車体から離脱させるには、ある程度の力を作用させなければならない。

【0010】

このため、乗員がステアリングホイールに衝突する初期には、ステアリングコラムが車体から離脱するために要する力と、上記エネルギー吸収部材が塑性変形させられる力とが同時に作用することになる。したがって、衝突初期に乗員に大きな力が作用することになり、安全上好ましくない。

設けられている。このため、上記仮保持フック部を利用して、ステアリングコラムを所定の位置に仮保持した状態で、コラムブラケット等を車体に対して連結することができる。

【0017】

したがって、ステアリングコラムを車体に組付けるための組付け補助部材や、ステアリングコラムを保持するための作業員が不要となる。したがって、ステアリングコラムの組付け作業を精度高くかつきわめて容易に行うことが可能になるとともに、製造コストを低減させることもできる。

【0018】

一方、本願考案に係るエネルギー吸収プレートは、その中間部に設けたエネルギー吸収折り曲げ部が、上記ステアリングコラムと上記コラムブラケットとの間に形成された収容空間に収容されている。

【0019】

このため、上記エネルギー吸収プレートを利用してステアリングコラムないしコラムブラケットを仮保持しても、上記エネルギー吸収折り曲げ部にステアリングコラムを仮保持する力が直接作用することはない。このため、上記エネルギー吸収折り曲げ部が変形させられて、エネルギー吸収プレートのエネルギー吸収特性が変化する恐れはない。

【0020】

しかも、本願考案に係るエネルギー吸収式ステアリング装置においては、ステアリングホイールに乗員が衝突してステアリングコラムが車体から離脱させられた場合、上記エネルギー吸収プレートのエネルギー吸収折り曲げ部が、上記収容空間を構成する上記ステアリングコラムと上記コラムブラケットの内面に案内されるようにして塑性変形させられる。

【0021】

したがって、衝突の際におけるステアリングコラムの移動方向に関係なく、上記エネルギー吸収プレートに安定したエネルギー吸収能力を発揮させることが可能となる。

【0022】

本実施例に係るステアリングコラム4は略円筒状に形成されており、図示しないベアリングを介して上記ステアリングシャフト3を内側部において回転自在に支持するとともに、上記コラムブラケット5および図示しない組付け部材を介して、車体に対して軸方向前方へ離脱可能に係着されている。

【0028】

上記コラムブラケット5は、図1ないし図3に示すように、上記ステアリングコラム4の上面に沿うようにして設けられており、断面略コ字状のプレート収容部11と、上記プレート収容部11の両端縁から上記コラムブラケットの円弧状外面に沿うようにして延出する接合部12、12と、上記接合部12、12の下端から左右両側方へ延出させられ、車体に対してそれぞれ係着される係着部13、13とを備え、上記接合部12、12において、上記コラムブラケット4の外面に溶接接合されるとともに、上記係着部13、13において、車体18aに対して離脱可能に係着されている。

【0029】

上記プレート収容部11は、上記コラムブラケット4の外面から所定すきまをあけて上方に配置される底壁部14と、この底壁部14の両端から下方に延出し、上記接合部12、12につながる縦壁部15、15とを備え、上記底壁部14と上記両縦壁部15、15と、上記ステアリングコラム4の上面とによって上記エネルギー吸収プレート9のエネルギー吸収折り曲げ部8を収容する収容空間16が形成されている。

【0030】

上記係着部13、13の後縁部には、後方に開口する係着孔17、17がそれぞれ形成されており、係着孔17、17および離脱プレート20、20に連通挿される係着ねじ19、19によって、コラムブラケット5が車体18aに対して軸方向前方へ離脱可能に係着される。

【0031】

上記離脱プレート20は断面略コ字状をしており、コ字状内側部に上記コラムブラケット5の係着部13が挿入される。そして、上記係着ネジ19によって、上記係着部13を共締め状に挟圧することにより、所定以上の荷重が作用した場

【0036】

また、本実施例においては、上記エネルギー吸収折り曲げ部 8 を上記収容空間 16 内に收容している。このため、仮保持フック部 21 を仮保持部材として利用した場合、仮保持力は上記コラムブラケット 5 のプレート收容部 11 に作用する。すなわち、上記仮保持力が上記エネルギー吸収折り曲げ部 8 に直接作用することはない。したがって、上記エネルギー吸収折り曲げ部 8 が上記仮保持力によって変形させられるおそれはなく、エネルギー吸収プレート 9 のエネルギー吸収特性が変化することもない。

【0037】

上記構成のエネルギー吸収式ステアリング装置において、ステアリングホイール 2 に乗員が衝突すると、まず上記ステアリングコラム 4 およびコラムブラケット 5 が軸方向前方へ移動するとともに車体から離脱させられる。このとき、上記エネルギー吸収プレート 9 の仮保持フック部 21 と上記車体 18a との間にすきま H を設けているため、衝突初期において、上記エネルギー吸収プレート 9 が塑性変形させられることはない。

【0038】

上記すきま H は、ステアリングコラムが車体から離脱するのに要する距離に設定されている。したがって、上記コラムブラケットが車体から完全に離脱させられるまで、上記エネルギー吸収プレート 9 が塑性変形させられることはない。

【0039】

次に、上記エネルギー吸収プレート 9 の仮保持フック部 21 が上記車体 18b の端部に当接した後、図 4 に示すように、上記エネルギー吸収折り曲げ部 8 が上記収容空間 16 に案内されるようにして塑性変形させられる。なお、図 4 においては車体 18b が移動するように描いてあるが、実際にはステアリングコラムおよびコラムブラケット 5 が軸方向下方へ移動させられるのである。

【0040】

上述したように、本実施例に係るエネルギー吸収式ステアリング装置 1 においては、上記エネルギー吸収折り曲げ部 8 が上記コラムブラケット 5 の内面とステアリングコラム 4 外面に案内されるようにして変形させられるため、ステアリングコ

図ることもできる。

【0047】

本願考案の範囲は上述の実施例に限定されることはない。

【0048】

実施例においては、略U字状に曲折した仮保持フック部21をエネルギー吸収プレートに一体的に設けたが、仮保持フック部21の形状は実施例に限定されることはなく、また、別途のフック部材をエネルギー吸収プレートの端部に設けてもよい。

【0049】

また、上記エネルギー吸収プレート9のコラムブラケットに対する係着構造も、溶接のみに限られず、ネジ止め等他の方法を採用することもできる。

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CLAIMS

[Utility model registration claim]

[Claim 1] While being fixed to the external surface of the steering shaft which equips the upper limit section with a steering wheel, the steering column which supports this steering shaft free [rotation] in the inside, and the above-mentioned steering column While the end section engages with the column bracket engaged possible [balking] to a car body at car-body ****, the above-mentioned steering column It is an energy absorption type steering system equipped with the energy absorption plate which the other end engages with the above-mentioned steering column external surface, and has the energy absorption bending section of the letter of the abbreviation for U characters in pars intermedia. While preparing the temporary retaining hook section in the end section of the above-mentioned energy absorption plate The energy absorption type steering system which prepares hold space between the above-mentioned steering column and the above-mentioned column bracket, and is characterized by holding the energy absorption bending section of the above-mentioned energy absorption plate in this hold space.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

While this application design can do the attachment activity over a car body easily, it is related with the energy absorption type steering system which can demonstrate the stable energy absorbing capacity.

[0002]

[Description of the Prior Art]

The steering wheel thru/or steering column in a steering system is arranged so that it may project toward crew from the driver's seat front. Therefore, at the time of a car collision, there is a possibility that crew may collide with the above-mentioned steering wheel thru/or a steering column. For this reason, when crew collides with a steering wheel thru/or a steering column, the energy absorption type steering system constituted so that collision energy might be absorbed in this steering wheel thru/or steering column is adopted in many cases.

[0003]

An energy absorption member is prepared between the above-mentioned steering column and the above-mentioned car body, and the above-mentioned energy absorption type steering system is constituted, while the steering column which supports a steering shaft pivotable is engaged possible [balking] to the front to a car body like, although indicated by JP,3-9974,U.

[0004]

When a ** person collides with the steering wheel arranged at the upper limit section of a steering shaft, while the engagement relation between the above-mentioned steering column and a car body is canceled and a steering column is made to secede from a car body to the front, the above-mentioned energy absorption member is made to carry out plastic deformation with migration of the above-mentioned steering column in the energy absorption type steering system indicated by the above-mentioned official report. Collision energy when crew collides with a steering wheel is absorbed by the above-mentioned energy absorption member by this, and crew's insurance can be planned.

[0005]

[Problem(s) to be Solved by the Device]

In the energy absorption type steering system of the above-mentioned configuration, when crew collides with a steering wheel and the load more than predetermined acts on a steering column, it must constitute so that the engagement relation between the above-mentioned steering column and a car body may be canceled. For this reason, a high attachment precision is required of the engagement structure of the above-mentioned steering column and a car body.

[0006]

the above-mentioned steering column — a car body — receiving — precision — in order to attach highly, it is necessary to carry out temporary maintenance of the above-mentioned steering column correctly in a predetermined attachment location, and to do an attachment activity For this reason, the worker for holding the attachment auxiliary member and the above-mentioned steering column for holding the above-mentioned steering column in a predetermined attachment location is needed.

[0007]

Consequently, while the attachment activity of the above-mentioned steering system was troublesome, it was difficult to attain rationalization of an attachment activity.

[0008]

Moreover, in the steering system indicated by the above-mentioned official report, the end section of the energy absorption member for absorbing the collision energy at the time of crew colliding with a steering wheel is

directly connected with the column bracket to the car body in the shape of *****.

Therefore, when the above-mentioned steering column displaces, the above-mentioned energy absorption member is made to carry out plastic deformation.

[0009]

On the other hand, in order to cancel the above-mentioned engagement relation and to make the above-mentioned steering column secede from a car body, it must make a certain amount of force act, although the above-mentioned steering column is being engaged possible [balking] to the car body in two or more places.

[0010]

For this reason, the force which the first stage when crew collides with a steering wheel takes in order that a steering column may secede from a car body, and the force which the above-mentioned energy absorption member is made to carry out plastic deformation will act on coincidence. Therefore, the big force will act on crew in early stages of a collision, and it is not desirable on insurance.

[0011]

Furthermore, in the example, the energy absorption member of a pair is prepared between the anchoring sections of a Uichi Hidari pair and the car bodies by which extension formation was carried out at the both sides of a column bracket. For this reason, while components mark increase, it is also difficult for an attachment activity to become still more complicated and to aim at reduction of a manufacturing cost.

[0012]

this application design is invented under above-mentioned circumstances — having — the above-mentioned conventional problem — solving — a steering column — a car body — precision — while being able to attach highly and easily, let it be the technical problem to offer the energy absorption type steering system which can demonstrate the stable energy absorbing capacity.

[0013]

[Means for Solving the Problem]

In order to solve the above-mentioned technical problem, the following technical means are provided in this application design.

[0014]

Namely, the steering shaft to which this application design equips the upper limit section with a steering wheel, While being fixed to the external surface of the steering column which supports this steering shaft free [rotation] in the inside, and the above-mentioned steering column While the end section engages with the column bracket engaged possible [balking] to a car body at car-body *****, the above-mentioned steering column It is an energy absorption type steering system equipped with the energy absorption plate which the other end engages with the above-mentioned steering column external surface, and has the energy absorption bending section of the letter of the abbreviation for U characters in pars intermedia. While preparing the temporary retaining hook section in the end section of the above-mentioned energy absorption plate Hold space is prepared between the above-mentioned steering column and the above-mentioned column bracket, and it is characterized by holding the energy absorption bending section of the above-mentioned energy absorption plate in this hold space.

[0015]

[An operation and effectiveness] of a design

[0016]

In this application design, the temporary retaining hook section is prepared in the end section of the above-mentioned energy absorption plate. For this reason, using the above-mentioned temporary retaining hook section, where temporary maintenance of the steering column is carried out at a position, a column bracket etc. can be connected to a car body.

[0017]

Therefore, the attachment auxiliary member for attaching a steering column to a car body and the worker for holding a steering column become unnecessary. therefore, the attachment activity of a steering column — precision — a manufacturing cost can also be reduced while becoming possible to carry out highly and very easily.

[0018]

On the other hand, the energy absorption plate concerning this application design is held in the hold space where the energy absorption bending section prepared in the pars intermedia was formed between the above-mentioned steering column and the above-mentioned column bracket.

[0019]

For this reason, even if it carries out temporary maintenance of a steering column thru/or the column bracket using the above-mentioned energy absorption plate, the force which carries out temporary maintenance of the steering column does not carry out a direct action to the above-mentioned energy absorption bending section. For this reason, the above-mentioned energy absorption bending section is made to deform, and there is no possibility that the energy absorption property of an energy absorption plate may change.

[0020]

And when crew collides with a steering wheel and a steering column is made to secede from a car body, the energy absorption bending section of the above-mentioned energy absorption plate is guided at the inside of the above-mentioned steering column which constitutes the above-mentioned hold space, and the above-mentioned column bracket, and is made to make and carry out plastic deformation in the energy absorption type steering system concerning this application design.

[0021]

Therefore, it becomes possible to demonstrate the energy absorbing capacity stabilized on the above-mentioned energy absorption plate regardless of the migration direction of the steering column in the case of a collision.

[0022]

Furthermore, in this application design, the column bracket and the energy absorption plate are constituted so that it may be separately engaged to a car body. For this reason, where the end section of the above-mentioned energy absorption plate is estranged from a car body, it can be engaged to a car body.

[0023]

That is, in case the above-mentioned steering column secedes from a car body, initiation of the plastic deformation of the above-mentioned energy absorption plate can be delayed by the clearance to the car body of the above-mentioned energy absorption plate. For this reason, that the above-mentioned energy absorption plate is made to carry out plastic deformation can disappear from the early stages of a collision, and it can also prevent effectively that the early impact-absorbing reaction force which acts on crew becomes excessive.

[0024]

It constitutes so that an energy absorption plate may be held in the hold space constituted using a column bracket and a steering column in this application design further again. For this reason, it is not necessary to prepare separately the member for forming the above-mentioned hold space. Therefore, it also becomes possible for components mark not to increase and to reduce a manufacturing cost.

[0025]

[Example]

Hereafter, the example concerning this application design is concretely explained based on a drawing.

[0026]

As shown in drawing 1, the energy absorption type steering system 1 concerning this example While being fixed to the external surface of the steering shaft 3 which equips the upper limit section with a steering wheel 2, the steering column 4 which supports this steering shaft 3 pivotable in the inside, and the above-mentioned steering column 4 While the end section engages with the column bracket 5 engaged possible [balking] to a car body at car-body ****, a steering column 4 It engages with the above-mentioned steering column external surface, and the other end is equipped with the energy absorption plate 9 which has the energy absorption bending section 8 of the letter of the abbreviation for U characters in pars intermedia, and a profile configuration is carried out.

[0027]

while the steering column 4 concerning this example is formed approximately cylindrical and supporting the above-mentioned steering shaft 3 free [rotation] in the inside section through the bearing which is not illustrated — the above-mentioned column bracket 5 — and it does not illustrate — it attaches and is engaged possible [balking] to the shaft-orientations front to the car body through the member.

[0028]

As shown in drawing 1 thru/or drawing 3, the above-mentioned column bracket 5 is formed in it, as the top face of the above-mentioned steering column 4 is met. The cross-section abbreviation KO character-like plate hold section 11, The joints 12 and 12 which extend from the both-ends edge of the above-mentioned plate hold section 11 as meet the circular external surface of the above-mentioned column bracket, While being made to extend from the lower limit of the above-mentioned joints 12 and 12 to the method of right-and-left both sides, having the engagement sections 13 and 13 engaged to a car body, respectively and carrying out weldbonding to the external surface of the above-mentioned column bracket 4 in the above-mentioned joints 12 and 12 In the above-mentioned engagement sections 13 and 13, it is engaged possible [balking] to car-body 18a.

[0029]

The bottom wall section 14 which the above-mentioned plate hold section 11 opens predetermined clearance from the external surface of the above-mentioned column bracket 4, and is arranged up, It extends caudad from the both ends of this bottom wall section 14, and has the wall sections 15 and 15 connected with the above-mentioned joints 12 and 12. The above-mentioned bottom wall section 14 and both the above-mentioned wall sections 15 and 15, The hold space 16 in which the energy absorption bending section 8 of the above-mentioned energy absorption plate 9 is held is formed of the top face of the above-mentioned steering column 4.

[0030]

The engagement holes 17 and 17 which carry out opening are formed in back, respectively, and the column bracket 5 engages with the trailing-edge section of the above-mentioned engagement sections 13 and 13 possible [balking] to the shaft-orientations front to car-body 18a according to the engagement **** 19 and 19 ***** (ed) by the engagement holes 17 and 17 and the balking plates 20 and 20.

[0031]

The above-mentioned balking plate 20 is carrying out the shape of a cross-section abbreviation KO character, and the engagement section 13 of the above-mentioned column bracket 5 is inserted in the KO character-like inside section. And it is constituted so that the above-mentioned column bracket 5 thru/or a steering column 4 may break away to the shaft-orientations front to car-body 18a with the above-mentioned engagement screw 19, when the load more than predetermined acts by compressing the above-mentioned engagement section 13 in the shape of *****.

[0032]

The above-mentioned energy absorption plate 9 is equipped with the temporary retaining hook section 21 bent in the shape of abbreviation for U characters in the letter of the abbreviation for U characters to the upper limit of this energy absorption bending section 8 to the energy absorption bending section 8 by which ups-and-downs shaping was carried out, the above-mentioned energy absorption bending section 8, and hard flow while extending ahead along the top face of the above-mentioned column bracket 5 from the joint 12 joined to a steering column 4, and this joint. The above-mentioned joint 12 is joined to the top face of the above-mentioned column bracket 5 by welding. On the other hand, the above-mentioned temporary retaining hook section 21 is made to counter through the predetermined clearance H in the condition of having attached the steering column 4 to the car body, to car-body 18b.

[0033]

The above-mentioned energy absorption bending section 8 of the above-mentioned energy absorption plate 9 is held in the hold space 16 which consists of the plate hold section 11 of the above-mentioned column bracket 5, and a top face of the above-mentioned column bracket 5. The above-mentioned hold space 16 is formed toward back in the shape of [which the height increases gradually] a taper, as shown in drawing 1 , and it is formed in the configuration which also extends the energy absorption bending section 8 of the above-mentioned energy absorption plate 9 in the shape of a taper in accordance with the cross-section configuration of the above-mentioned plate hold section 11.

[0034]

In the energy absorption type steering system 1 concerning this example, the above-mentioned temporary retaining hook section 21 is stopped to the above-mentioned car-body 18b, it is in the condition which carried out temporary maintenance of a steering column 4 thru/or the column bracket 5, and the attachment activity of column bracket 5 grade can be done.

[0035]

For this reason, while being able to do the attachment activity of a steering column 4 very easily, neither the attachment auxiliary member for attaching a steering column 4 to a car body nor the worker holding a steering column is needed. Therefore, while being able to simplify an attachment process, reduction of a manufacturing cost can also be aimed at.

[0036]

Moreover, in this example, the above-mentioned energy absorption bending section 8 is held in the above-mentioned hold space 16. For this reason, when the temporary retaining hook section 21 is used as a temporary attachment component, temporary holding power acts on the plate hold section 11 of the above-mentioned column bracket 5.

That is, the above-mentioned temporary holding power does not carry out a direct action to the above-mentioned energy absorption bending section 8. Therefore, there is no possibility that the above-mentioned energy absorption bending section 8 may be made to deform by the above-mentioned temporary holding power, and the energy absorption property of the energy absorption plate 9 does not change.

[0037]

While the above-mentioned steering column 4 and the column bracket 5 move to the shaft-orientations front first, it is made to secede from a car body in the energy absorption type steering system of the above-mentioned configuration, if crew collides with a steering wheel 2. Since clearance H is formed between the temporary retaining hook section 21 of the above-mentioned energy absorption plate 9, and the above-mentioned car-body 18a at this time, the above-mentioned energy absorption plate 9 is not made to carry out plastic deformation in the early stages of a collision.

[0038]

The above-mentioned clearance H is set as the distance taken for a steering column to secede from a car body. Therefore, the above-mentioned energy absorption plate 9 is not made to carry out plastic deformation until the above-mentioned column bracket is made to secede from a car body completely.

[0039]

Next, after the temporary retaining hook section 21 of the above-mentioned energy absorption plate 9 contacts the edge of the above-mentioned car-body 18b, the above-mentioned energy absorption bending section 8 is guided in the above-mentioned hold space 16, and is made to make and carry out plastic deformation, as shown in drawing 4. In addition, although it has drawn so that car-body 18b may move in drawing 4, a steering column and the column bracket 5 are moved to a shaft-orientations lower part in fact.

[0040]

the direction which a steering column 4 displaces since the above-mentioned energy absorption bending section 8 is guided on the inside of the above-mentioned column bracket 5, and steering column 4 external surface, makes and is made to deform in the energy absorption type steering system 1 concerning this example as mentioned above — the stable energy absorption property can be demonstrated irrespective of how.

[0041]

And in this example, in the early stages of a collision, it is constituted so that the temporary retaining hook section 21 of the above-mentioned energy absorption plate 9 may not contact the above-mentioned car-body 18b.

For this reason, after a steering column 4 is completely separated from a car body, the above-mentioned energy absorption plate is made to carry out plastic deformation, and it has not been said that the impact reaction force which joins crew in the early stages of a collision becomes excessive.

[0042]

Moreover, the magnitude of the clearance H between car-body 18b to which this engages with the above-mentioned temporary retaining hook section 21 can be changed easily. For this reason, the free-running part which a steering column 4 needs for being separated from a car body can be adjusted very easily. Therefore, it becomes possible to apply to various steering systems, and versatility is very high.

[0043]

Moreover, it becomes possible by setting up the width of face of the energy absorption bending section in the shape of a taper, or changing the taper configuration of the above-mentioned hold space 16, as shown in _____ 6 as shown in drawing 5 to set up an energy absorption property freely.

[0044]

That is, it sets up or it also becomes possible to set up so that a fixed load may act, as it indicates as a continuous line that the load F which acts on crew in drawing 7 as a broken line shows increases with bias of the above-mentioned steering column 4 as it sets up or an alternate long and short dash line shows that it decreases with the variation rate of a steering column 4.

[0045]

Therefore, it can become possible to adjust an energy absorption property broadly, and crew's safety can also be raised sharply.

[0046]

Since sufficient effectiveness can be expected only by forming one energy absorption plate 9 in this example further again, components mark can be reduced and reduction of cost can also be aimed at.

[0047]

The range of this application design is not limited to an above-mentioned example.

[0048]

In an example, although the temporary retaining hook section 21 bent in the shape of abbreviation for U characters was formed in the energy absorption plate in one, the configuration of the temporary retaining hook section 21 is not limited to an example, and may prepare a special hook member in the edge of an energy

absorption plate.

[0049]

Moreover, the engagement structure over the column bracket of the above-mentioned energy absorption plate 9 is not restricted only to welding, either, but can also adopt other approaches, such as a screw stop.

[Translation done.]

* NOTICES *

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the side elevation of the energy absorption type steering system concerning this application design showing a cross section in part.

[Drawing 2] It is the top view showing the important section of the energy absorption type steering system concerning drawing 1.

[Drawing 3] III-III in drawing 2 It is the sectional view which meets a line.

[Drawing 4] It is drawing explaining an operation of this application design.

[Drawing 5] It is the perspective view of an energy absorption plate.

[Drawing 6] It is an important section sectional view explaining an operation of this application design.

[Drawing 7] It is drawing explaining the effectiveness of the energy absorption type steering system concerning this application design.

[Description of Notations]

1 Energy Absorption Type Steering System

2 Steering Wheel

3 Steering Shaft

4 Steering Column

5 Column Bracket

8 Energy Absorption Bending Section

9 Energy Absorption Plate

16 Hold Space

18a, 18b Car body

21 Temporary Retaining Hook Section

[Translation done.]